```
=> d que 142
L3             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7664-41-7/RN
L5             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  1314-62-1/RN
L6             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7440-06-4/RN
L7             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  11122-73-9/RN
L8        227949 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3 OR AMMONIA
L9         25987 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L5 OR VANADIA
L10       347310 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6 OR PLATINUM OR PT
L12         2926 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L7
L13            1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8 AND L9 AND L10 AND L12

L14          325 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "REFRACTORY METAL
                 OXIDES"+PFT,NT/CT
L15           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14 AND L8
L16           16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8 AND  REFRACTORY METAL
                 OXIDE?
L17           16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15 OR L16
L18            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17 AND L10
L19            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 AND L9
L20           16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L17 OR L18 OR L19)
L21           16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13 OR L20
L22            1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  LAYERED AMMONIA OXIDAT?
L25               QUE  ABB=ON  PLU=ON  FILM? OR THINFILM? OR LAYER? OR OVER
                  LAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR MULTILAYER? OR S
                  HEET? OR LEAF? OR FOIL? OR COAT? OR VENEER? OR SHEATH? OR
                   COVER?
L26        20003 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8(L)L25
L28           18 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L26 AND L10 AND L9
L29           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND CAT/RL
L30        91484 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "OXIDATION CATALYSTS"+PFT,
                 NT/CT
L31            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 AND L30
L33           29 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L21 OR L22 OR L29 OR L31
L34           17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 AND AIR POLLU?/SC,SX
L35           12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 NOT L34
L36            6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND CAT?
L37               QUE  ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR SU
                  BSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR P
                  ANE? OR DISK? OR DISC# OR WAFER?
L38          780 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 AND L12
L39            1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L8 AND L9 AND L10

L40            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L8
L41            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 AND L37
L42           23 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 OR (L39 OR L40 OR
                 L41)


=> d que 156
L37               QUE  ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR SU
                  BSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR P
                  ANE? OR DISK? OR DISC# OR WAFER?
L44          530 SEA FILE=WPIX ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L45           13 SEA FILE=WPIX ABB=ON  PLU=ON  L44 AND AMMONIA
L46            4 SEA FILE=WPIX ABB=ON  PLU=ON  L45 AND PLATINUM?
L47            1 SEA FILE=WPIX ABB=ON  PLU=ON  L45 AND VANADIA?
L48            4 SEA FILE=WPIX ABB=ON  PLU=ON  L46 OR L47
L49            3 SEA FILE=WPIX ABB=ON  PLU=ON  L45 AND  B01D0053?/IPC
L50            5 SEA FILE=WPIX ABB=ON  PLU=ON  L48 OR L49
L51           67 SEA FILE=WPIX ABB=ON  PLU=ON  L44 AND PLATINUM
```

```
L52          33 SEA FILE=WPIX ABB=ON  PLU=ON  L51 AND  B01D0053?/IPC
L53          17 SEA FILE=WPIX ABB=ON  PLU=ON  L52 AND L37
L54          17 SEA FILE=WPIX ABB=ON  PLU=ON  L53 AND CATALYST?
L55           2 SEA FILE=WPIX ABB=ON  PLU=ON/ L54 AND (AMMONIA OR NH3)
L56           5 SEA FILE=WPIX ABB=ON  PLU=ON  L50 OR L55


=> d que l57
L44         530 SEA FILE=WPIX ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L57           0 SEA FILE=COMPENDEX ABB=ON  PLU=ON  L44 AND AMMONIA


=> d que l61
L44         530 SEA FILE=WPIX ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L58           0 SEA FILE=PASCAL ABB=ON  PLU=ON  L44 AND AMMONIA
L59          14 SEA FILE=PASCAL ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L60           0 SEA FILE=PASCAL ABB=ON  PLU=ON  L59 AND (AMMONIA OR NH3)
L61           0 SEA FILE=PASCAL ABB=ON  PLU=ON  L58 OR L60


=> d que l67
L44         530 SEA FILE=WPIX ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L62           0 SEA FILE=JAPIO ABB=ON  PLU=ON  L44 AND AMMONIA
L63          27 SEA FILE=JAPIO ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L64           0 SEA FILE=JAPIO ABB=ON  PLU=ON  L63 AND NH3
L65           4 SEA FILE=JAPIO ABB=ON  PLU=ON  L63 AND PLATINUM
L66           0 SEA FILE=JAPIO ABB=ON  PLU=ON  L63 AND VANADIA
L67           4 SEA FILE=JAPIO ABB=ON  PLU=ON  L62 OR (L64 OR L65 OR L66)


=> dup rem l42 l56 l57 l61 l67
L57 HAS NO ANSWERS
L61 HAS NO ANSWERS
FILE 'HCAPLUS' ENTERED AT 11:45:50 ON 28 AUG 2007
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FILE 'JAPIO' ENTERED AT 11:45:50 ON 28 AUG 2007
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PROCESSING COMPLETED FOR L42
PROCESSING COMPLETED FOR L56
PROCESSING COMPLETED FOR L57
PROCESSING COMPLETED FOR L61
PROCESSING COMPLETED FOR L67
L68          29 DUP REM L42 L56 L57 L61 L67 (3 DUPLICATES REMOVED)
                ANSWERS '1-23' FROM FILE HCAPLUS
                ANSWERS '24-25' FROM FILE WPIX
                ANSWERS '26-29' FROM FILE JAPIO

=> d 1-23 ibib ed abs  hitstr hitind

L68  ANSWER 1 OF 29  HCAPLUS  COPYRIGHT 2007 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2006:168226  HCAPLUS
DOCUMENT NUMBER:          144:217801
TITLE:                    Zone coated catalyst to simultaneously
                          reduce NOx and unreacted ammonia
```

INVENTOR(S): Patchett, Joseph Allan; Dettling, Joseph Charles
PATENT ASSIGNEE(S): Engelhard Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 22 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006039843	A1	20060223	US 2004-925018	20040823
WO 2006023932	A1	20060302	WO 2005-US29992	20050822
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1784258	A1	20070516	EP 2005-793942	20050822
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				

PRIORITY APPLN. INFO.: US 2004-925018 A 20040823
WO 2005-US29992 W 20050822

ED Entered STN: 23 Feb 2006

AB Provided is an emissions treatment system and method for reducing NOx emissions in the exhaust stream produced from an internal combustion engine. The system has an injector for periodically metering **ammonia** or an **ammonia** precursor into an exhaust stream; and a first substrate with a first selective catalytic reduction (SCR) catalyst composition, downstream of the injector. The first substrate has an inlet end, an outlet end, a length extending between the inlet end to the outlet end, wall elements and a plurality of passages defined by the wall elements. The first SCR catalyst composition is disposed on the wall elements from the inlet end toward the outlet end to a length that is less than the substrate's axial length to form an inlet zone. The first substrate also has an NH3 destruction catalyst composition with a **platinum** group metal component dispersed on a **refractory metal oxide.** The NH3 destruction catalyst is disposed on the wall elements from the outlet end toward the inlet end to a length that is less than the substrate's axial length to form an outlet zone. Generally, there is from 0.1 to 10 g/ft3 of **platinum** group metal component in the outlet zone.

IT **1314-62-1**, **Vanadia**, uses
(as component of first SCR catalyst composition; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)

RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7664-41-7, Ammonia**, processes
(slip, reduction of; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IT **7440-06-4, Platinum**, uses
(zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

INCL 423239100; 422177000; 422180000; 422172000
CC 59-3 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67
ST zone **coated** catalyst SCR nitrogen oxide removal **ammonia** slip
IT Zeolites (synthetic), uses
(Cu- or Fe-exchanged, as component of first SCR catalyst composition; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT Reduction
(selective catalytic; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT Exhaust gases (engine)
(zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT **Platinum**-group metals
(zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT 1306-38-3, Ceria, uses
(as catalyst for NH3 destruction; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT 1314-35-8, Tungsten oxide (WO3), uses **1314-62-1, Vanadia**, uses 13463-67-7, Titania, uses
(as component of first SCR catalyst composition; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT **7664-41-7, Ammonia**, processes
(slip, reduction of; zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses **7440-06-4, Platinum**, uses 7440-16-6, Rhodium, uses
(zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)
IT 11104-93-1, Nitrogen oxide, processes
(zone **coated** catalyst to simultaneously reduce NOx and unreacted **ammonia**)

L68 ANSWER 2 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2005:451605 HCAPLUS
DOCUMENT NUMBER: 142:468240

TITLE: Emissions treatment system with NSR and SCR catalysts
INVENTOR(S): Li, Yuejin; Deeba, Michel; Dettling, Joseph Charles; Patchett, Joseph Allan; Roth, Stanley Allan
PATENT ASSIGNEE(S): Engelhard Corporation, USA
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005047663	A2	20050526	WO 2004-US36723	20041104
WO 2005047663	A3	20050623		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2005129601	A1	20050616	US 2004-975428	20041029
EP 1687514	A2	20060809	EP 2004-800722	20041104
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
IN 2006KN01164	A	20070427	IN 2006-KN1164	20060504

PRIORITY APPLN. INFO.:			
US 2003-517137P	P	20031104	
US 2004-975428	A	20041029	
WO 2004-US36723	W	20041104	

ED Entered STN: 27 May 2005

AB Provided is an emissions treatment system for an exhaust stream, having a NOx storage reduction (NSR) catalyst with a NOx sorbent at a concentration of at least 0.1g/in3 and a **platinum** group metal component dispersed on a **refractory metal oxide** support; and a selective catalytic reduction (SCR) catalyst disposed downstream of the NSR catalyst. The emissions treatment system is advantageously used for the treatment of exhaust streams from diesel engines and lean burn gasoline engines.

IT **7440-06-4**, **Platinum**, uses
(NSR catalyst component; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IT **1314-62-1**, Vanadium pentoxide, uses

(SCR catalyst component; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **7664-41-7**, **Ammonia**, reactions
(SCR reductant; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IC ICM F01N003-08
ICS F01N003-20
CC 59-3 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67
IT **Refractory metal oxides**
(substrate for NOx sorbent component of NSR catalyst; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)
IT 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses
(NSR catalyst component; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)
IT 1314-35-8, Tungsten oxide (WO3), uses **1314-62-1**, Vanadium pentoxide, uses 13463-67-7, Titania, uses
(SCR catalyst component; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)
IT **7664-41-7**, **Ammonia**, reactions
(SCR reductant; engine exhaust treatment system with NOx storage reduction and selective catalytic reduction catalysts)

L68 ANSWER 3 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2005:220099 HCAPLUS
DOCUMENT NUMBER: 142:265825
TITLE: **Layered ammonia oxidation** catalyst
INVENTOR(S): Tran, Pascaline Harrison; Chen, James Mon-Her; Lapadula, Gerard Diomede; Blute, Marc Thomas
PATENT ASSIGNEE(S): Engelhard Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 5 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005054524	A1	20050310	US 2003-659159	20030910
WO 2005025724	A1	20050324	WO 2004-US27717	20040826

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,

SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG

EP 1660216	A1	20060531	EP 2004-782238		20040826
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK					
CN 1849163	A	20061018	CN 2004-80026110		20040826
JP 2007504945	T	20070308	JP 2006-526126		20040826
PRIORITY APPLN. INFO.:			US 2003-659159	A	20030910
			WO 2004-US27717	W	20040826

ED Entered STN: 13 Mar 2005

AB The invention pertains to a **layered ammonia oxidation** catalyst. The **layered** catalyst causes **ammonia** to be selectively oxidized in the presence of an oxidant such as air, while minimizing the formation of nitrogen oxides (NOx). The **layered** catalyst comprises a refractory oxide support such as gamma alumina upon which a **platinum** component is deposited and a **vanadia** component is deposited on the **platinum.** The catalyst is preferably disposed on a **substrate** such as a metal **foil** whose **surface** contains a "herringbone" pattern.

IT **1314-62-1**, **Vanadia**, processes **7440-06-4**, **Platinum**, processes **11122-73-9**
(**layered ammonia oxidation** catalyst)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

RN 11122-73-9 HCAPLUS
CN Chromium alloy, nonbase, Cr,Fe (CA INDEX NAME)

Component	Component Registry Number
Cr	7440-47-3
Fe	7439-89-6

IT **7664-41-7**, **Ammonia**, reactions
(**layered ammonia oxidation** catalyst)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IC ICM B01J023-648

INCL 502312000; 423237000
CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67
ST **layered ammonia oxidn** catalyst
platinum vanadia alumina
IT Air pollution
(control; **layered ammonia oxidation** catalyst)
IT Combustion gases
Flue gases
Honeycomb structures
Oxidation catalysts
Surface area
Waste gases
(**layered ammonia oxidation** catalyst)
IT **Refractory metal oxides**
(**layered ammonia oxidation** catalyst)
IT 1344-28-1, Alumina, processes
(gamma; **layered ammonia oxidation** catalyst)
IT **1314-62-1, Vanadia**, processes **7440-06-4, Platinum**, processes **11122-73-9**
(**layered ammonia oxidation** catalyst)
IT **7664-41-7, Ammonia**, reactions
(**layered ammonia oxidation** catalyst)

L68 ANSWER 4 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:138868 HCAPLUS
DOCUMENT NUMBER: 142:224506
TITLE: Catalyst arrangement and method of purifying the exhaust gas of internal combustion engines operated under lean conditions
INVENTOR(S): Pfeifer, Marcus; Soeger, Nicola; Demel, Yvonne; Kuhl, Tobias; Spurk, Paul Christian; Gieshoff, Juergen; Lox, Egbert; Kreuzer, Thomas
PATENT ASSIGNEE(S): Umicore A.-G. & Co. K.-G., Germany
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005014146	A1	20050217	WO 2004-EP8539	20040729
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10335785	A1	20050310	DE 2003-10335785	20030805
CA 2534806	A1	20050217	CA 2004-2534806	20040729

EP 1660217	A1	20060531	EP 2004-763630		20040729
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK					
BR 2004013367	A	20061017	BR 2004-13367		20040729
CN 1863586	A	20061115	CN 2004-80029120		20040729
JP 2007501107	T	20070125	JP 2006-522295		20040729
US 2007110650	A1	20070517	US 2006-567204		20061211
PRIORITY APPLN. INFO.:			DE 2003-10335785	A	20030805
			WO 2004-EP8539	W	20040729

ED Entered STN: 17 Feb 2005

AB The invention relates to a catalyst arrangement for purifying the exhaust gases of internal combustion engines operated under lean conditions. It is proposed that a thin-walled, porous carrier be **coated** on the exit surface by a catalyst for selective catalytic reduction and on the entry surface by a catalyst **layer** able to store nitrogen oxides under lean exhaust gas conditions and to convert nitrogen oxides into **ammonia** under rich exhaust gas conditions. When the exhaust gas is passed through the catalytic **coatings** and the support material, a significant improvement in the nitrogen oxide conversion is achieved compared to a series arrangement of the catalysts on sep. carriers. Wall flow filters have been found to be useful as thin-walled carriers.

IT **7440-06-4**, **Platinum**, uses
(NOx storage catalyst; lean burn engine exhaust treatment using thin-walled, porous carrier coated on entry surface with NOx storage catalyst and on exit surface with selective reduction catalyst)

RN 7440-06-4 HCAPLUS

CN Platinum (CA INDEX NAME)

Pt

IT **1314-62-1**, Vanadium oxide (V2O5), uses
(SCR catalyst component; lean burn engine exhaust treatment using thin-walled, porous carrier coated on entry surface with NOx storage catalyst and on exit surface with selective reduction catalyst)

RN 1314-62-1 HCAPLUS

CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM B01D053-94
ICS F01N003-28

CC 59-3 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67

IT Alkaline earth oxides
Platinum-group metals
(NOx storage catalyst; lean burn engine exhaust treatment using thin-walled, porous carrier coated on entry surface with NOx storage catalyst and on exit surface with selective reduction catalyst)

IT 513-77-9, Barium carbonate **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses 65453-23-8, Cerium zirconium oxide
(NOx storage catalyst; lean burn engine exhaust treatment using thin-walled, porous carrier coated on entry surface with NOx storage catalyst and on exit surface with selective reduction catalyst)

IT 1313-27-5, Molybdenum oxide, uses 1314-35-8, Tungsten oxide (WO3), uses **1314-62-1**, Vanadium oxide (V2O5), uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses

(SCR catalyst component; lean burn engine exhaust treatment using thin-walled, porous carrier coated on entry surface with NOx storage catalyst and on exit surface with selective reduction catalyst)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 5 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:151542 HCAPLUS
DOCUMENT NUMBER: 144:455364
TITLE: **Pt**-V2O5-WO3/TiO2 catalysts supported on SiC filter for NO reduction at low temperature
AUTHOR(S): Choi, Joo-Hong; Kim, Jin-Hyun; Bak, Young-Cheoul; Amal, Rose; Scott, Jason
CORPORATE SOURCE: Department of Chemical and Biological Engineering/ERI, Gyeongsang National University, Jinju, 660-701, S. Korea
SOURCE: Korean Journal of Chemical Engineering (2005), 22(6), 844-851
CODEN: KJCHE6; ISSN: 0256-1115
PUBLISHER: Korean Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 17 Feb 2006
AB A catalytic filter, V2O5-WO3-TiO2 supported on a ceramic filter, is a promising material to simultaneously treat particulates and NOx at optimum temps. of .apprx.320°. To improve its catalytic activity at low temps., the effect of **Pt** addition on the catalytic filter was studied. **Pt**-V2O5-WO3-TiO2/SiC filters were prepared by co-impregnation of **Pt**, V, and W precursors on a TiO2 coated-SiC filter by vacuum aided-dip coating. The **Pt** -added catalytic filter shifted optimum working temps. from 280-330° (for non-**Pt**-impregnated filter) to 180-230°, providing a Nx slip concentration <20 ppm for treating 700 ppm NO at a face velocity of 2 cm/s with the same value over the non-**Pt**-added catalytic filter. The promotional effect following **Pt** addition is believed to result from elec. modification of the catalyst maintaining a high electron transfer state. NH3 oxidation was also observed to be dominant above the optimal selective catalytic reduction temperature
IT **7664-41-7**, **Ammonia**, reactions
(reductant; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**-promoted **vanadia**/tungsten oxide titania-**coated** silicon carbide catalyst)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IT **1314-62-1**, **Vanadia**, uses
(titania-**coated** silicon carbide, **platinum** -promoted tungsten oxide and; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**-promoted **vanadia**/tungsten oxide titania-**coated** silicon carbide catalyst)
RN 1314-62-1 HCAPLUS

CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7440-06-4, Platinum**, uses
(titania-**coated** silicon carbide, **vanadia**
/tungsten oxide doped with; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**
-promoted **vanadia**/tungsten oxide titania-**coated**
silicon carbide catalyst)

RN 7440-06-4 HCAPLUS

CN Platinum (CA INDEX NAME)

Pt

CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 57, 67

ST silicon carbide supported **platinum vanadia**
tungsten titania redn catalyst; ammonia selective catalytic redn waste gas nitric oxide

IT Reduction catalysts
(**Pt**-V2O5-WO3/TiO2-SiC; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**-promoted **vanadia**/tungsten oxide titania-**coated** silicon carbide catalyst)

IT Flue gases
Waste gases
(low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**-promoted **vanadia**
/tungsten oxide titania-**coated** silicon carbide catalyst)

IT 7727-37-9, Nitrogen, processes 10024-97-2, Nitrous oxide, processes 10102-44-0, Nitrogen dioxide, processes
(low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**-promoted **vanadia**
/tungsten oxide titania-**coated** silicon carbide catalyst)

IT **7664-41-7, Ammonia**, reactions
(reductant; low temperature selective catalytic reduction of waste gas nitric
oxide by **ammonia** over **platinum**-promoted
vanadia/tungsten oxide titania-**coated** silicon
carbide catalyst)

IT 13463-67-7, Titania, uses
(silicon carbide **coated** with; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**-promoted **vanadia**/tungsten oxide titania-**coated** silicon carbide catalyst)

IT **1314-62-1, Vanadia**, uses
(titania-**coated** silicon carbide, **platinum**
-promoted tungsten oxide and; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over
platinum-promoted **vanadia**/tungsten oxide titania-**coated** silicon carbide catalyst)

IT 1314-35-8, Tungsten oxide, uses
(titania-**coated** silicon carbide, **platinum**
-promoted **vanadia** and; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over
platinum-promoted **vanadia**/tungsten oxide titania-**coated** silicon carbide catalyst)

IT **7440-06-4, Platinum**, uses

(titania-**coated** silicon carbide, **vanadia**
/tungsten oxide doped with; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over **platinum**
-promoted **vanadia**/tungsten oxide titania-**coated**
silicon carbide catalyst)

IT 409-21-2, Silicon carbide, uses
(titania-**coated**, **platinum**-promoted
vanadia/tungsten oxide; low temperature selective catalytic reduction of waste gas nitric oxide by **ammonia** over
platinum-promoted **vanadia**/tungsten oxide titania-
coated silicon carbide catalyst)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 6 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:950220 HCAPLUS
DOCUMENT NUMBER: 139:397779
TITLE: Pollutant reductions in engine exhaust gases by combustion of fuel emulsions and oxidation of exhaust gas components in flow-through oxidation catalysts
INVENTOR(S): Brown, Kevin F.; Langer, Deborah A.; Duncan, David A.
PATENT ASSIGNEE(S): The Lubrizol Corporation, Can.
SOURCE: U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. Ser. No. 557,953.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003221360	A1	20031204	US 2003-457510	20030609
US 6949235	B2	20050927		
US 6606856	B1	20030819	US 2000-557953	20000424
PRIORITY APPLN. INFO.:			US 2000-519056 B2	20000303
			US 2000-557953 A2	20000424

ED Entered STN: 07 Dec 2003
AB Reduction of exhaust pollutants from engines, especially NOx, N2O, and particulates, is carried out by: (1) combusting an aqueous fuel emulsion that contains suitable emulsifying additives and combustion improvers, and (2) passing the exhaust gas from the engine into a flow-through cellular monolith containing an oxidation catalyst. The fuel emulsions, especially diesel fuels, contain: (1) 1 or 2 fuel-soluble additives prepared by reacting C50-500-hydrocarbyl-substituted carboxylic acids (with different mol. wts.) with **ammonia** or an amine, (2) an ionic or nonionic surfactant with a hydrophilic-lipophilic balance of 1-40, (3) emulsion-stabilizing and combustion-improving water-soluble compds., such as amine or ammonium salts, azides, nitro compds., and alkali metal and alkaline earth metal salts, and (4) cetane improvers, antifreeze agents, and organic solvents. A metal or ceramic monolith **coated** with a washcoat material selected from zeolites, Al2O3, SiO2, TiO2, CeO2, ZrO2, V2O5, La2O3, and a catalyst selected from **Pt**, Pd, Rh, Ir, Ru, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ag, Ce, and Ga.

IT **1314-62-1**, Vanadium oxide (V2O5), uses
(washcoat catalyst support; pollutant redns. in engine exhaust gases by combustion of fuel emulsions and oxidation of exhaust gas components in flow-through oxidation catalysts)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **7440-06-4**, **Platinum**, uses
(washcoat oxidation catalyst; pollutant redns. in engine exhaust gases by combustion of fuel emulsions and oxidation of exhaust gas components in flow-through oxidation catalysts)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC ICM C10L001-32
INCL 044301000
CC 51-9 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): **59**
IT **Oxidation catalysts**
(as washcoat on ceramic or metal monoliths; pollutant redns. in engine exhaust gases by combustion of fuel emulsions and oxidation of exhaust gas components in flow-through oxidation catalysts)
IT 1306-38-3, Cerium oxide (CeO2), uses 1312-81-8, Lanthanum oxide (La2O3) 1314-23-4, Zirconium oxide (ZrO2), uses **1314-62-1**, Vanadium oxide (V2O5), uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses
(washcoat catalyst support; pollutant redns. in engine exhaust gases by combustion of fuel emulsions and oxidation of exhaust gas components in flow-through oxidation catalysts)
IT 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses
(washcoat oxidation catalyst; pollutant redns. in engine exhaust gases by combustion of fuel emulsions and oxidation of exhaust gas components in flow-through oxidation catalysts)
REFERENCE COUNT: 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 7 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:888632 HCAPLUS
DOCUMENT NUMBER: 137:374280
TITLE: Catalyst for purification of diesel engine exhaust gas
INVENTOR(S): Kim, Young-Nam
PATENT ASSIGNEE(S): KH Chemicals Co., Ltd., S. Korea
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002092224	A1	20021121	WO 2001-KR845	20010522

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

KR 2002088013	A	20021125	KR 2001-26597		20010516
CA 2447665	A1	20021121	CA 2001-2447665		20010522
AU 2001260735	A1	20021125	AU 2001-260735		20010522
AU 2001260735	B2	20070215			
BR 2001017021	A	20040420	BR 2001-17021		20010522
JP 2004513771	T	20040513	JP 2002-542591		20010522
JP 3569703	B2	20040929			
CN 1524014	A	20040825	CN 2001-823429		20010522
US 2003104932	A1	20030605	US 2002-958069		20020716
US 6855661	B2	20050215			
TW 260241	B	20060821	TW 2002-91133554		20021115
JP 2004105964	A	20040408	JP 2003-353417		20031014
MX 2003PA10426	A	20050921	MX 2003-PA10426		20031114
IN 2003MN01139	A	20050429	IN 2003-MN1139		20031215
US 2005032637	A1	20050210	US 2004-936091		20040907
PRIORITY APPLN. INFO.:			KR 2001-26597	A	20010516
			JP 2002-542591	A3	20010522
			WO 2001-KR845	W	20010522
			US 2002-958069	A3	20020716

ED Entered STN: 22 Nov 2002

AB Preparation and use of a catalyst for purification of diesel engine exhaust gas is presented, whereby the catalyst comprises a carrier of at least one sulfur-resistant refractory oxide and at least one catalytic metal, wherein at least one solid acid and/or H2SO4 is carried on the carrier by adding at least one precursor of said solid acid and/or H2SO4 during the preparation of the carrier, and preparation thereof. The refractory oxide is selected from: at least one oxide of Si, Al, Fe, Sn and/or Ce or their analogs in the form of a composite oxide or a mixture of oxides; zeolite; mordenite; and their mixts. The solid acid is selected from: tungsten oxides; molybdenum oxides; and their mixts.,. The catalytic metal is selected from: **Pt**, Pd, Rh, Ru, Re and their mixts.,. The catalyst preparation process comprises the steps of: (1) preparing a solution of at least one sulfur-resistant refractory oxide precursor; (2) adding an alkali solution such as an aqueous **ammonia** solution to co-precipitate and to form a gel or a mixed gel thereof; (3) drying, shaping and calcining the resulted gel or mixed gel; and (4) depositing at least one catalytic metal. At least one solid acid precursor or its solution is added before or after the co-precipitation of step (2), and H2SO4 is added before or after the co-precipitation of step (2). The catalyst of this invention is thermally and chemical durable and can effectively remove the particulate matter, hydrocarbons and NOx contained in the diesel engine exhaust gas at low temps.

IT **7664-41-7**, **Ammonia**, reactions
(for gelation of catalyst precursors; preparation and use of diesel engine exhaust catalyst including composite oxide and H2SO4)

RN 7664-41-7 HCAPLUS

CN Ammonia (CA INDEX NAME)

NH_3

IT **7440-06-4**, **Platinum**, uses
(preparation and use of diesel engine exhaust catalyst including composite oxide and H2SO4)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC ICM B01J021-06
ICS B01J029-89; B01J037-02
CC 59-3 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67
ST diesel exhaust catalyst low temp composite oxide sulfuric acid; **platinum** tungsten zirconia titania composite oxide diesel exhaust catalyst
IT **Refractory metal oxides**
(sulfur- resistant; preparation and use of diesel engine exhaust catalyst including composite oxide and H2SO4)
IT **7664-41-7**, **Ammonia**, reactions
(for gelation of catalyst precursors; preparation and use of diesel engine exhaust catalyst including composite oxide and H2SO4)
IT 1314-23-4D, Zirconia, composites with silica, titania, or tin oxide 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 12028-48-7, Ammonium metatungstate 12173-98-7, Mordenite 13463-67-7D, Titania, composites with zirconia or tin oxide 18282-10-5D, Tin oxide sno2, composites with zirconia or titania
(preparation and use of diesel engine exhaust catalyst including composite oxide and H2SO4)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 8 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:923812 HCAPLUS
DOCUMENT NUMBER: 142:80608
TITLE: Treatment method of catalyst with water and gas for enhancing activity and reducing inactivation
INVENTOR(S): Kim, Moon Chan; Son, In Hyuck
PATENT ASSIGNEE(S): S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2002041346	A	20020601	KR 2002-10338	20020226
PRIORITY APPLN. INFO.:			KR 2002-10338	20020226

ED Entered STN: 03 Nov 2004
AB Provided is a refractory inorg. oxides catalyst supported by solid powder with enhanced activity and selectivity, exhibiting no inactivation after the use of 200 h. The catalyst is used in PROX reaction, elimination of volatile organic material and catalytic oxidation The treatment method comprises the steps of making inorg. organic catalyst such as alumina, titania and silica oxide by slurry washing to the honeycomb, drying, calcining at 300-800°C and cooling to 100°C; and improving the surface of the above catalyst by heating at more than 100°C and flowing on its surface with one or more liquid materials selected from water, alcs., **ammonia** water, hydrogen peroxide water and hydrochloride and with one or more gases chosen from hydrogen, oxygen, ozone, carbon monoxide, methane, propane and butane.
IC ICM B01J037-00
CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): **59**
IT Oxides (inorganic), uses
Refractory metal oxides
(treatment method of catalyst with water and gas for enhancing activity and reducing inactivation)

L68 ANSWER 9 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:370573 HCAPLUS
DOCUMENT NUMBER: 137:144487
TITLE: Monitoring aging and deactivation of emission abatement catalysts for selective catalytic reduction of NOx
AUTHOR(S): Herman, Richard G.; Sale, John W.; Stenger, Harvey G., Jr.; Lyman, Charles E.; Agogliatti, John E.; Cai, Yeping; Ramachandran, Bala; Choi, Sukwon
CORPORATE SOURCE: Zettlemoyer Center for Surface Studies, Lehigh University, Bethlehem, PA, 18015, USA
SOURCE: Topics in Catalysis (2002), 18(3-4), 251-257
CODEN: TOCAFI; ISSN: 1022-5528
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 19 May 2002
AB Titania/**vanadia**, zeolite, and noble metal catalysts are utilized for selective catalytic reduction (SCR) of NOx using **ammonia** as the reductant in different temperature ranges. Studies of aging have been carried out to probe deactivation rates and mechanisms. Periodic laboratory testing of samples of NOx reduction catalysts from **multilayer** reactors, such as those utilized at elec. power plants, allows prediction of catalyst lifetimes. Testing has been carried out under protocol conditions with monolith, plate-type, and pelleted catalysts so that relative NO reduction rates can be compared, with or without the presence of SO2. The catalysts were analyzed by surface anal. techniques, including electron microscopy and XPS, to probe surface morphol., loss of active components, presence of poisons, and blocking of pores and active sites by ammonium bisulfate to determine the dominant mode(s) of gradual deactivation.
IT **1314-62-1**, **Vanadia**, uses **7440-06-4**, **Platinum**, uses
(reduction catalysts containing; monitoring of aging and deactivation of catalysts for selective catalytic reduction of NOx by NH3)
RN 1314-62-1 HCAPLUS

CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 51, 67
IT Mordenite-type zeolites
Zeolite ZSM-5
(**Pt**-containing, reduction catalysts; monitoring of aging and deactivation of catalysts for selective catalytic reduction of NOx by NH3)
IT **1314-62-1**, **Vanadia**, uses 1344-28-1, Alumina, uses
7440-06-4, **Platinum**, uses 13463-67-7, Titania, uses
(reduction catalysts containing; monitoring of aging and deactivation of catalysts for selective catalytic reduction of NOx by NH3)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 10 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:885209 HCAPLUS
DOCUMENT NUMBER: 136:39097
TITLE: Manufacture of heterogeneous **catalysts** on micrometer range-particle supports
INVENTOR(S): Roth, Marcel; Zander, Lars; Schwerin, Albrecht; Gutsche, Bernhard
PATENT ASSIGNEE(S): Henkel K.-G.a.A., Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10025964	A1	20011206	DE 2000-10025964	20000525

PRIORITY APPLN. INFO.: DE 2000-10025964 20000525

ED Entered STN: 07 Dec 2001
AB A title **catalyst** with increased **surface** comprises Fe, Co, Ni, Cu, Ag, Au, Pd, **Pt**, Cd, Cr, Mn, W, V, Ti and/or Mo preferably in oxide form, supported on particulate solid support with particle size <100 μm. The support and, optionally, the **catalyst** is magnetic or magnetizable. For example, a dispersion of Fe oxide **catalyst** particles was prepared by precipitation of FeCl3 and FeCl2·4H2O with aqueous **ammonia** containing polyacrylic acid. The dispersion was dialyzed, concentrated by evaporation, the liquid concentrate combined with Novozym 435 and oleic acid-rich sunflower oil and the mixture treated at 60° with 70%-aqueous H2O2, the enzyme was separated by filtration and the **catalyst** separated by use of a magnetic field to give a product containing epoxidized oleic acid with 80%

conversion. Nanoscale γ-Fe2O3 particles **coated** with WO3, V2O5 or MoO3 were also prepared

IT **7440-06-4, Platinum**, uses
(manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

RN 7440-06-4 HCAPLUS

CN Platinum (CA INDEX NAME)

Pt

IT **1314-62-1**, Vanadium oxide (V2O5), uses
(particle shell; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

RN 1314-62-1 HCAPLUS

CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM B01J023-00
ICS B01J023-70; B01J031-26; C12N009-14; C07C409-24; C07C407-00; C07D301-12; C07C067-02; B01J023-85; B01J023-847

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

ST **catalyst** epoxidn manuf magnetic particle support; iron oxide magnetic particle support epoxidn **catalyst** manuf; sunflower oil epoxidn iron oxide magnetic particle **catalyst** manuf

IT Alkenes, reactions
(epoxidn.; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT **Catalyst** supports
Epoxidation catalysts
Oxidation catalysts
(manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT Carboxylic acids, preparation
(peroxy, epoxidn. agents; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT Fatty acids, reactions
(sunflower-oil, Me esters, epoxidn.; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT 9001-62-1, Novozym 435
(cocatalyst; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT 7722-84-1, Hydrogen peroxide, uses
(epoxidn. agent; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT 111-66-0, 1-Octene
(epoxidn.; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses **7440-06-4, Platinum**, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-33-7, Wolfram, uses 7440-43-9, Cadmium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses
(manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)

IT 1332-37-2P, Iron oxide, preparation
(manufacture of heterogeneous **catalysts** on micrometer-range

magnetic particle supports)
IT 1309-37-1, Iron oxide (Fe2O3), uses 1309-38-2, Magnetite, uses
(particle core; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)
IT 1313-27-5, Molybdenum oxide (MoO3), uses 1314-35-8, Tungsten oxide (WO3), uses **1314-62-1**, Vanadium oxide (V2O5), uses 13463-67-7, Titanium dioxide, uses
(particle shell; manufacture of heterogeneous **catalysts** on micrometer-range magnetic particle supports)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 11 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:401547 HCAPLUS
DOCUMENT NUMBER: 133:26268
TITLE: Resistance-based gas sensors with WO3-TiO2 active layer for determination of NOx in automobile exhaust gases
INVENTOR(S): Kornely, Susanne; Seidl, Monika; Meixner, Hans; Fleischer, Maximilian; Lampe, Uwe; Mrotzek, Christine; Pohle, Roland; Giber, Janos
PATENT ASSIGNEE(S): Siemens Aktiengesellschaft, Germany
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1008847	A2	20000614	EP 1999-123914	19991201
EP 1008847	A3	20020605		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19856369	A1	20000615	DE 1998-19856369	19981207
DE 19856369	C2	20001207		
PRIORITY APPLN. INFO.:			DE 1998-19856369 A	19981207

ED Entered STN: 16 Jun 2000
AB A resistive gas sensor, especially suitable for detection of NO, NO2, NH3, or hydrocarbons in an automobile exhaust gas, consists of a gas-sensitive layer, a corresponding measuring electrode, and a heating unit, in which the gas-sensitive layer consists of a mixture of WO3 and TiO2, which is prepared by crystallizing WO3 around a nucleus of TiO2. The gas-sensitive layer (5-50 μm thick), which contains ≥50 weight% WO3, can be prepared by the sol-gel method using tungstic acid salt (M2WO4, in which M = H, Na, K, or NH4) precursors, or can be prepared from Ti(OC3H7)4 and WCl6 precursors. The gas sensor is also connected to an oxidation catalyst consisting of an impregnated metal oxide support (e.g., γ-Al2O3, SiO2, or TiO2 impregnated with a noble metal, such as **Pt**, Rh, Pd, or Ir) or a pure metal oxide catalyst (e.g., TiO2-V2O5 containing CuO or MnO2).
IT **7664-41-7**, **Ammonia**, analysis
(determination of, in exhaust gases; resistance-based gas sensors with WO3-TiO2 active **layer** for determination of NOx in automobile exhaust gases)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IT **1314-62-1**, Vanadium oxide (V2O5), uses **7440-06-4**, **Platinum**, uses
(oxidation catalyst containing; resistance-based gas sensors with WO3-TiO2 active layer for determination of NOx in automobile exhaust gases)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC ICM G01N027-12
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): **59**
IT **Oxidation catalysts**
(sensor containing; resistance-based gas sensors with WO3-TiO2 active layer for determination of NOx in automobile exhaust gases)
IT **7664-41-7**, **Ammonia**, analysis 10102-43-9, Nitrogen oxide (NO), analysis 10102-44-0, Nitrogen oxide (NO2), analysis 11104-93-1, Nitrogen oxide, analysis
(determination of, in exhaust gases; resistance-based gas sensors with WO3-TiO2 active **layer** for determination of NOx in automobile exhaust gases)
IT 1313-13-9, Manganese oxide (MnO2), uses **1314-62-1**, Vanadium oxide (V2O5), uses 1317-38-0, Copper oxide (CuO), uses 1344-28-1, Alumina, uses 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses 7631-86-9, Silica, uses
(oxidation catalyst containing; resistance-based gas sensors with WO3-TiO2 active layer for determination of NOx in automobile exhaust gases)

L68 ANSWER 12 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:843199 HCAPLUS
DOCUMENT NUMBER: 134:90201
TITLE: Multisensor system for remote detection of trace gases in thin-layer metal oxide gas sensor arrays
AUTHOR(S): Wollenstein, J.; Jagle, M.; Scheulin, M.; Schmid, J.; Bottner, H.; Becker, W. J.
CORPORATE SOURCE: Freiburg, Germany
SOURCE: VDI-Berichte (2000), 1530(Sensoren und Messsysteme 2000), 191-200
CODEN: VDIBAP; ISSN: 0083-5560
PUBLISHER: VDI Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 03 Dec 2000
AB A gas sensor for remote measurements of trace gases was developed and tested. Thin (60-70 nm) layers of V2O5 and SnO2 were deposited on a 3+3 mm Si/SiO2 chip by vapor deposition and sputtering, resp., with subsequent annealing. The oxidic layers were optionally coated with a 1.5-nm layer of **Pt** as catalyst. The sensors were

tested by exposition to an 80:20 N/O mixture containing traces of CH4, NO2, CO, or NH3 (V2O with and without **Pt** catalyst) and CO, NO2, or O3 (SnO2 with or without **Pt**). In a long-term field test, the CO concentration was monitored in a road tunnel with a SnO2 sensor with **Pt** catalyst (to suppress cross-sensitivity to NO2).

IT **7664-41-7**, **Ammonia**, analysis
(multisensor system for detection of trace gases in thin-**layer** metal oxide gas sensor arrays)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IT **7440-06-4**, **Platinum**, uses
(multisensor system for detection of trace gases in thin-layer metal oxide gas sensor arrays)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IT **1314-62-1**, Vanadium oxide (V2O5), uses
(multisensor system for detection of trace gases in thin-layer metal oxide gas sensor arrays)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
CC 59-1 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 79
IT 74-82-8, Methane, analysis 630-08-0, Carbon monoxide, analysis **7664-41-7**, **Ammonia**, analysis 10028-15-6, Ozone, analysis 10102-44-0, Nitrogen oxide (NO2), analysis
(multisensor system for detection of trace gases in thin-**layer** metal oxide gas sensor arrays)
IT **7440-06-4**, **Platinum**, uses
(multisensor system for detection of trace gases in thin-layer metal oxide gas sensor arrays)
IT **1314-62-1**, Vanadium oxide (V2O5), uses 18282-10-5, Tin oxide (SnO2)
(multisensor system for detection of trace gases in thin-layer metal oxide gas sensor arrays)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 13 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:142020 HCAPLUS
DOCUMENT NUMBER: 130:227135
TITLE: Apparatus for biological treatment of garbage
INVENTOR(S): Mizobuchi, Manabu; Nakagawa, Shouji; Kinubawa, Kensaku
PATENT ASSIGNEE(S): Matsushita Electric Works, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11057669	A	19990302	JP 1997-222645	19970819
PRIORITY APPLN. INFO.:			JP 1997-222645	19970819

ED Entered STN: 05 Mar 1999
AB The apparatus comprises (a) a biol. decomposition tank, (b) an air intake path, and (c) an exhaust path, and a purification apparatus comprising a metal chloride-adhered purification **layer** and a catalyst **layer** and a heater for the purification apparatus are placed at c. An **ammonia** adsorbing **layer** may be formed beneath the purification **layer** in the purification apparatus Odor generated during treatment of garbage is decreased.
IT **1314-62-1**, Vanadium pentoxide, uses **7440-06-4**, **Platinum**, uses
(air purification and catalytic deodorization in apparatus for biol. treatment of garbage)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC ICM B09B003-00
ICS B01D053-86; B01J023-89
CC 60-4 (Waste Treatment and Disposal)
Section cross-reference(s): 47, **59**, 67
ST biol garbage treatment catalytic deodorization; metal chloride purifn **layer** garbage treatment; **ammonia** adsorption biol garbage treatment app
IT Zeolite-group minerals
(activated, **ammonia** adsorption **layer**; air purification and catalytic deodorization in apparatus for biol. treatment of garbage)
IT 1344-28-1, Alumina, uses
(activated, **ammonia** adsorption **layer**; air purification and catalytic deodorization in apparatus for biol. treatment of garbage)
IT 1313-99-1, Nickel oxide, uses **1314-62-1**, Vanadium pentoxide, uses 1332-37-2, Iron oxide, uses 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11104-61-3, Cobalt oxide 11129-60-5, Manganese oxide
(air purification and catalytic deodorization in apparatus for biol. treatment of garbage)

L68 ANSWER 14 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:191622 HCAPLUS
DOCUMENT NUMBER: 126:190273
TITLE: Catalytic treatment of waste gases containing

harmful pollutants
INVENTOR(S): Shimada, Takashi; Hatakeyama, Tosha; Nawa, Yoji
PATENT ASSIGNEE(S): Japan Pionics, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09000873	A	19970107	JP 1995-174370	19950616
PRIORITY APPLN. INFO.:			JP 1995-174370	19950616

ED Entered STN: 22 Mar 1997
AB Harmful pollutants (especially, amines or NH3) are removed from waste gases from semiconductor manufacturing by contacting with catalysts containing mainly CuO, MnO2, and Co(II) salts adhered on **refractory metal oxide** supports.
IT **7664-41-7**, **Ammonia**, processes
(catalytic treatment of waste gases containing harmful pollutants)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IC ICM B01D053-58
ICS B01D053-72; B01J020-06; B01J023-889
CC 59-4 (**Air Pollution** and Industrial Hygiene)
IT 74-89-5, Monomethylamine, processes 75-50-3, Trimethylamine, processes 124-40-3, Dimethylamine, processes 302-01-2, Hydrazine, processes **7664-41-7**, **Ammonia**, processes 30260-66-3, Dimethylhydrazine
(catalytic treatment of waste gases containing harmful pollutants)

L68 ANSWER 15 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:307657 HCAPLUS
DOCUMENT NUMBER: 126:282028
TITLE: Layered catalysts for exhaust gas treatment
INVENTOR(S): Morsbach, Bernd
PATENT ASSIGNEE(S): BASF A.-G., Germany
SOURCE: Eur. Pat. Appl., 7 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 763380	A1	19970319	EP 1996-114446	19960910
R: BE, DE, FR, GB, NL				
DE 19534497	A1	19970320	DE 1995-19534497	19950918
PRIORITY APPLN. INFO.:			DE 1995-19534497 A	19950918

ED Entered STN: 14 May 1997
AB The **layered** catalysts comprise ≥1 inner and ≥1

outer **layer**, where the center or the inner **layers** comprise oxide **layers** containing noble metals (e.g., **Pt**, Pd, and/or Rh) and the outer **layers** contain the components A and C or A, B, and C, where A is an oxide of the elements Ti, Al, Zr, or their mixts., B is an oxide of the elements Mo, W, or their mixts., and C is an oxide or sulfate of the elements V, Fe, Mn, Ni, Co, Cu, Nb, Zn, or their mixts. and where the carrier center and each **layer** may optionally also contain an oxide or sulfate of the elements Si, B, Zn, or their mixts., inorg. fibers, clays or their mixts. The carrier may be ≥1 component chosen from A, B, or C, or their mixts., and inert carrier (e.g., cordierite or mullite) or a metallic carrier with and least one oxidic support **layer.** The catalyst is especially suitable for removal of nitrogen oxides, carbon monoxide, and hydrocarbons from oxygen-containing exhaust gas at 50-800° and 0.01-200 bar using **ammonia** or and **ammonia** releasing agent as reductant.

IT **1314-62-1**, Vanadium oxide, uses **7440-06-4**, **Platinum**, uses
(layered catalysts for exhaust gas treatment)

RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IT **7664-41-7**, **Ammonia**, reactions
(reductant; **layered** catalysts for exhaust gas treatment)

RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IC ICM B01J035-00
ICS B01J037-02; B01D053-86; B01D053-94

CC 59-3 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 51, 67

IT 1313-27-5, Molybdenum oxide, uses 1313-96-8, Niobium oxide 1313-99-1, Nickel oxide, uses 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconium oxide, uses 1314-35-8, Tungsten oxide, uses **1314-62-1**, Vanadium oxide, uses 1332-37-2, Iron oxide, uses 1344-28-1, Aluminum oxide (Al2O3), uses 1344-70-3, Copper oxide 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses 7733-02-0, Zinc sulfate 7758-98-7, Copper sulfate, uses 7785-87-7, Manganese sulfate 7786-81-4, Nickel sulfate 10124-43-3, Cobalt sulfate 10124-49-9, Iron sulfate 11104-61-3, Cobalt oxide 11129-60-5, Manganese oxide 13463-67-7, Titanium oxide, uses 16785-81-2, Vanadium sulfate 36220-20-9, Niobium sulfate
(layered catalysts for exhaust gas treatment)

IT **7664-41-7**, **Ammonia**, reactions
(reductant; **layered** catalysts for exhaust gas treatment)

L68 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:664605 HCAPLUS
DOCUMENT NUMBER: 125:281737
TITLE: Porous sintered steel infiltrated with low-density metals for sliding parts resistant to seizing
INVENTOR(S): Fujine, Manabu; Kajikawa, Yoshiaki; Yamashita, Minoru; Saito, Koji
PATENT ASSIGNEE(S): Toyota Jidosha Kabushiki Kaisha, Japan
SOURCE: Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 732417	A1	19960918	EP 1996-104256	19960318
EP 732417	B1	20020213		
R: DE, FR, GB, IT, SE				
JP 08319504	A	19961203	JP 1996-56518	19960313
JP 3191665	B2	20010723		
AU 9648135	A	19960926	AU 1996-48135	19960315
AU 710033	B2	19990909		
KR 183227	B1	19990401	KR 1996-6946	19960315
CA 2172029	C	20010515	CA 1996-2172029	19960318
PRIORITY APPLN. INFO.:			JP 1995-59455 A	19950317
			JP 1996-56518 A	19960313

ED Entered STN: 11 Nov 1996
AB The composites for sliding parts are manufactured from sintered porous steel (or Fe alloy) having Vickers microhardness of 200-800, and are infiltrated with low-d. metal (especially Al or Mg alloys) for increased resistance to seizing. The sintered steels or Fe alloys have nominal d. at 30-88% of theor., and optionally contain dispersed hard particles (especially carbides) at ≤50 volume%. The sintered alloy steels typically contain C 0.5-1.2, Cr 5.8-8.7, Mo 0.1-0.6, and V 0.1-0.6 weight%. The Al alloy for infiltration is typically molten AC8A alloy nominally containing Cu 0.8-1.3, Si 11-13, and Mg 0.7-1.3 weight%, and can be heat treated for age hardening after the infiltration of sintered parts. The sintered steel having 60% of theor. d. was manufactured from the atomized Fe-0.2 C-1 Si-0.4 Mn-5 Cr-1.3 Mo-1 weight% V steel powder of SKD61 type, infiltrated with Al-alloy melt, and showed no seizing in a sliding test against nitrided steel at 250°.
IT **7664-41-7D**, **Ammonia**, dissociated
(cooling in, of sintered parts; sintered steel parts cooled in gas and infiltrated with low-d. metal for resistance to seizing)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IT **11122-73-9**
(hard phase, dispersed; sintered steel hardened with dispersed particles and infiltrated with low-d. metal for resistance to seizing)
RN 11122-73-9 HCAPLUS
CN Chromium alloy, nonbase, Cr,Fe (CA INDEX NAME)

Component	Component Registry Number
Cr	7440-47-3
Fe	7439-89-6

IC ICM C22C033-02
CC 55-4 (Ferrous Metals and Alloys)
IT Aluminum alloy, **base**
Magnesium alloy, **base**
(infiltration with molten; sintered steel parts infiltrated with low-d. alloys for resistance to seizing)
IT Iron alloy, **base**
(sintered, sliding parts; porous steel infiltrated with low-d. metal for sliding parts resistant to seizing)
IT 1333-74-0, Hydrogen, processes **7664-41-7D**, **Ammonia**, dissociated 7727-37-9, Nitrogen, processes
(cooling in, of sintered parts; sintered steel parts cooled in gas and infiltrated with low-d. metal for resistance to seizing)
IT **11122-73-9** 12783-13-0 60719-59-7, Chromium iron carbide
(hard phase, dispersed; sintered steel hardened with dispersed particles and infiltrated with low-d. metal for resistance to seizing)

L68 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:153530 HCAPLUS
DOCUMENT NUMBER: 124:184317
TITLE: Method for denitrating exhaust gases
INVENTOR(S): Iida, Kouzo; Nojima, Shigeru; Obayashi, Yoshiaki; Kobayashi, Norihisa; Serizawa, Satoru
PATENT ASSIGNEE(S): Mitsubishi Jukogyo Kabushiki Kaisha, Japan
SOURCE: Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 694329	A2	19960131	EP 1995-111683	19950725
EP 694329	A3	19970813		
EP 694329	B1	20001018		
R: AT, DE, IT, NL				
JP 08038856	A	19960213	JP 1994-176494	19940728
JP 3462580	B2	20031105		
JP 08103633	A	19960423	JP 1994-238892	19941003
JP 3241216	B2	20011225		
CA 2154500	A1	19960129	CA 1995-2154500	19950724
CA 2154500	C	20011002		
AT 196998	T	20001115	AT 1995-111683	19950725
US 5728356	A	19980317	US 1995-508174	19950727
US 6080376	A	20000627	US 1997-988116	19971210

PRIORITY APPLN. INFO.:
JP 1994-176494 A 19940728
JP 1994-238892 A 19941003
US 1995-508174 A3 19950727

ED Entered STN: 16 Mar 1996
AB Nitrogen oxides are catalytically removed using **ammonia** as a reducing agent in the presence of a catalyst comprising a denitration catalyst **layer** in the upstream of the gas flow, an **ammonia** decomposition catalyst **layer** capable of decomposing **ammonia** into nitrogen oxides in the downstream and a 2nd denitration catalyst **layer** or a denitration catalyst **layer** capable of decomposing **ammonia** in the further downstream. **Ammonia** is used at an amount of not less than the reaction equivalent for the nitrogen oxides in the exhaust gas .
IT **1314-62-1**, Vanadium pentoxide, uses **7440-06-4**, **Platinum**, uses
(method for denitrating exhaust gases)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC ICM B01D053-86
ICS B01J029-04
CC 59-3 (**Air Pollution** and Industrial Hygiene)
IT 1314-35-8, Tungsten trioxide, uses **1314-62-1**, Vanadium pentoxide, uses 7439-88-5, Iridium, uses 7439-91-0, Lanthanum, uses 7440-03-1, Niobium, uses 7440-05-3, Palladium, uses **7440-06-4**, **Platinum**, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-32-6, Titanium, uses 7440-36-0, Antimony, uses 7440-45-1, Cerium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-55-3, Gallium, uses 7440-62-2, Vanadium, uses 13463-67-7, Titania, uses
(method for denitrating exhaust gases)

L68 ANSWER 18 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:80488 HCAPLUS
DOCUMENT NUMBER: 124:124719
TITLE: Chemical vapor deposition of silicon nitride filaments from silicon subhydrides and **ammonia**
AUTHOR(S): Linner, Britta; Guggenberger, Michael A.; Huettinger, Klaus J.; Kleebe, Hans-Joachim
CORPORATE SOURCE: Inst. Chem. Tech., Univ. Karlsruhe, Karlsruhe, D-76128, Germany
SOURCE: Journal of the European Ceramic Society (1996), 16(1), 15-23
CODEN: JECSER; ISSN: 0955-2219
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 07 Feb 1996
AB This paper describes the synthesis of monocryst. α-silicon nitride filaments. The synthesis is **based** on a catalyzed chemical vapor deposition process using iron or iron alloys as catalysts and silicon subhydrides and **ammonia** as gaseous precursors of silicon nitride. For in situ production of silicon subhydrides by gasification of silicon powder with hydrogen superficially nitrided

silicon powder was used to guarantee constant production rates up to 10 h and more. The kinetics of filament growth are shown to be determined by the solubility of nitrogen in and the diffusion of nitrogen through the catalyst particle.

IT **11122-73-9**
(catalysts; CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)
RN 11122-73-9 HCAPLUS
CN Chromium alloy, nonbase, Cr,Fe (CA INDEX NAME)

Component	Component Registry Number
Cr	7440-47-3
Fe	7439-89-6

IT **7664-41-7**, **Ammonia**, processes
(precursor; CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

CC 57-2 (Ceramics)
IT Vapor deposition processes
(CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)
IT Crystal whiskers
(silicon nitride; CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)
IT 7439-89-6, Iron, uses 11110-23-9 **11122-73-9**
(catalysts; CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)
IT **7664-41-7**, **Ammonia**, processes 50808-20-3, Silicon hydride
(precursor; CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)
IT 12033-89-5P, Silicon nitride, preparation
(whiskers; CVD of silicon nitride filaments from silicon subhydrides and **ammonia** using iron or iron alloys as catalysts)

L68 ANSWER 19 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:989089 HCAPLUS
DOCUMENT NUMBER: 124:69673
TITLE: Voltammetry in the absence of a solution phase with solids prepared by a sol-gel process as the electrolytes: facilitation of an electrocatalytic anodic process in the presence of ammonia
AUTHOR(S): Cox, James A.; Alber, Kathryn S.; Tess, Mark E.; Cummings, T. E.; Gorski, Waldemar
CORPORATE SOURCE: Department of Chemistry, Miami University, Oxford,

OH, 45056, USA
SOURCE: Journal of Electroanalytical Chemistry (1995), 396(1-2), 485-90
CODEN: JECHES
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 19 Dec 1995

AB An interdigitated microelectrode (IME) coated with a glassy polymer of V2O5 by a sol-gel process is demonstrated to serve as a solid electrolyte for voltammetric studies in the absence of a contacting solution phase. The oxidation of Fe(II)-1,10-phenanthroline immobilized therein occurs at the same potential as in solution-phase expts. at a **Pt** working electrode; however, the current limiting process in the solid-state system depends on the time scale of the experiment Cyclic voltammetry at scan rates of 0.1-1.0 V/s yields currents limited by planar diffusion, but at <3 mV/s the peak currents are independent of scan rate. This steady-state behavior in the coated IME is indicative of current limitation by semi-cylindrical diffusion to the 10 μm + 5 mm **Pt surfaces** at slow scan rates; potential-step chronoamperometry verifies this interpretation. When 1 set of **Pt** fingers in the IME is a quasi-reference and the other set is modified with a polymeric Ru oxide **catalyst**, the presence of NH3 in the surrounding gas phase causes an anodic process. Indirect evidence that this process is the electrocatalytic oxidation of NH3 is presented. This anodic behavior is not observed when the voltammetry is performed in a conventional solution cell under otherwise-identical conditions.

IT **1314-62-1**, Vanadium pentoxide, uses
(glassy polymer; interdigitated microelectrode **coated** with glassy polymer of vanadium pentoxide and facilitation of electrocatalytic anodic process in presence of **ammonia**)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7440-06-4**, **Platinum**, uses
(voltammetry in absence of solution phase with solids prepared by sol-gel process as electrolytes and facilitation of electrocatalytic anodic process at ruthenia-modified **platinum** in presence of ammonia)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

CC 72-2 (Electrochemistry)
Section cross-reference(s): 67

IT **Oxidation catalysts**
(electrochem., voltammetry in absence of solution phase with solids prepared by sol-gel process as electrolytes and facilitation of electrocatalytic anodic process at ruthenia-modified **platinum** in presence of ammonia)

IT Polyoxyalkylenes, uses
(fluorine- and sulfo-containing, ionomers, interdigitated microelectrode **coated** with Nafion and facilitation of electrocatalytic anodic process in presence of **ammonia**)

IT Fluoropolymers

(polyoxyalkylene-, sulfo-containing, ionomers, interdigitated microelectrode **coated** with Nafion and facilitation of electrocatalytic anodic process in presence of **ammonia**)
IT Ionomers
(polyoxyalkylenes, fluorine- and sulfo-containing, interdigitated microelectrode **coated** with Nafion and facilitation of electrocatalytic anodic process in presence of **ammonia**)
IT **1314-62-1**, Vanadium pentoxide, uses
(glassy polymer; interdigitated microelectrode **coated** with glassy polymer of vanadium pentoxide and facilitation of electrocatalytic anodic process in presence of **ammonia**)
IT 11113-84-1, Ruthenium oxide
(mixed-valence cyano cross-linked polymeric; voltammetry in absence of solution phase with solids prepared by sol-gel process as electrolytes and facilitation of electrocatalytic anodic process at ruthenia-modified **platinum** in presence of ammonia)
IT **7440-06-4**, **Platinum**, uses
(voltammetry in absence of solution phase with solids prepared by sol-gel process as electrolytes and facilitation of electrocatalytic anodic process at ruthenia-modified **platinum** in presence of ammonia)

L68 ANSWER 20 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1991:589024 HCAPLUS
DOCUMENT NUMBER: 115:189024
TITLE: Apparatus for treatment of diesel exhaust gases
INVENTOR(S): Kawamura, Satoshi
PATENT ASSIGNEE(S): Mitsubishi Heavy Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03130522	A	19910604	JP 1989-263994	19891012
PRIORITY APPLN. INFO.:			JP 1989-263994	19891012

ED Entered STN: 01 Nov 1991
AB NOx is removed from diesel exhaust gases by catalytic reduction with NH3 in an apparatus comprising means for injecting NH3 into the down stream of diesel engine exhaust duct, means for passing the gas mixture through a porous ceramic filter loaded with catalysts (e.g., V2O5-TiO2) for decomposing NOx into N2 and H2O, means for backwashing the filter and catalytically combusting the trapped dust and tar, and means for controlling the temperature of catalyst bed and preventing the pressure loss in the ceramic filter.
IT **1314-62-1**, Vanadium oxide (V2O5), uses and miscellaneous
7440-06-4, **Platinum**, uses and miscellaneous
(catalyst containing, on porous ceramic filter, for diesel exhaust gas treatment)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC ICM F01N003-08
ICS B01D053-36
CC 59-4 (**Air Pollution** and Industrial Hygiene)
IT 1314-35-8, Tungsten oxide, uses and miscellaneous **1314-62-1**, Vanadium oxide (V2O5), uses and miscellaneous 7440-05-3, Palladium, uses and miscellaneous **7440-06-4**, **Platinum**, uses and miscellaneous 11098-99-0, Molybdenum oxide
(catalyst containing, on porous ceramic filter, for diesel exhaust gas treatment)
IT 11104-93-1, Nitrogen oxide, uses and miscellaneous
(removal of, from diesel exhaust gases, by catalytic reduction with **ammonia**, on catalyst-**coated** porous ceramic filter)

L68 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:55593 HCAPLUS
DOCUMENT NUMBER: 104:55593
TITLE: Vanadium oxide catalyst for nitrogen oxide reduction and its use in a process
INVENTOR(S): Heck, Ronald M.; Keith, Carl D.; Farrauto, Robert J.
PATENT ASSIGNEE(S): Engelhard Corp., USA
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 161743	A2	19851121	EP 1985-301150		19850221
EP 161743	A3	19860402			
EP 161743	B1	19880928			
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE					
CA 1238628	A1	19880628	CA 1985-474859		19850221
AT 37490	T	19881015	AT 1985-301150		19850221
PRIORITY APPLN. INFO.:			US 1984-582368	A	19840222
			EP 1985-301150	A	19850221

ED Entered STN: 23 Feb 1986
AB A catalyst for selective catalytic reduction of NOx with NH3 in a waste gas stream, preventing P-contamination of the catalyst, has an upstream section comprising a P-retaining material and a downstream section comprising a catalyst containing an effective amount of V2O5, e.g., 0.5-15 weight% on a **refractory metal oxide** support, e.g. Al2O3 or TiO2. The P-retaining material, e.g. activated may also be on a refractory support.
IT **7664-41-7**, uses and miscellaneous
(nitrogen oxide reduction with, in waste gases, catalyst phosphorus contamination prevention in)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IC ICM B01D053-36
CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 49, 51, 67
ST vanadium oxide composite redn catalyst; phosphorus contamination prevention redn catalyst; nitrogen oxide catalytic redn **ammonia**
IT **7664-41-7**, uses and miscellaneous
(nitrogen oxide reduction with, in waste gases, catalyst phosphorus contamination prevention in)
IT 11104-93-1, uses and miscellaneous
(removal of, from waste gases, catalytic reduction with **ammonia** for, catalyst phosphorus contamination prevention in)

L68 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:14262 HCAPLUS
DOCUMENT NUMBER: 96:14262
TITLE: **Platinum** thin film resistance element
INVENTOR(S): Ohno, Yoshio
PATENT ASSIGNEE(S): Kirk K. K., Japan
SOURCE: Eur. Pat. Appl., 42 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 38078	A1	19811021	EP 1981-102856	19810414
EP 38078	B1	19850313		
R: DE, FR, GB, NL				
JP 56147048	A	19811114	JP 1980-49205	19800416
JP 56147049	A	19811114	JP 1980-49206	19800416
JP 56147050	A	19811114	JP 1980-49208	19800416
JP 56150339	A	19811120	JP 1980-49207	19800416
JP 57101750	A	19820624	JP 1980-177220	19801217
EP 63264	A1	19821027	EP 1982-102641	19810414
EP 63264	B1	19841212		
R: DE, FR, GB, NL				
GB 2110165	A	19830615	GB 1981-36331	19811202
GB 2110165	B	19850911		

PRIORITY APPLN. INFO.:

JP 1980-49204	A	19800416
JP 1980-49205	A	19800416
JP 1980-49206	A	19800416
JP 1980-49207	A	19800416
JP 1980-49208	A	19800416
JP 1980-177220	A	19801217
EP 1981-102856	A	19810414

ED Entered STN: 12 May 1984
AB A method is described for preparing a stable **Pt** thin-film

high-resistance resistor which does not require a 3 or 4 core lead wire and which can be used as an accurate temperature sensor and a gas sensor for low concns. of CO, NO, NH3, or an inflammable gas. The **Pt** film resistor is formed by sputtering on an insulator **substrate** which is stable at ≤1000°, preferably a cylinder or column, a 200-1000 Å **Pt** film at a power of 0.8 W/cm2, heat aging by raising the temperature in steps of 100° to 1000°, forming a spiral kerf in the film to obtain the desired resistance, and attaching lead wires to both ends of the film. In forming a temperature sensor, the film is covered with an insulating polyimide or silicone film. In forming a gas sensor for CO, a thin layer of Cu oxide is deposited on the **Pt**, for NO detection a thin layer of a rare earth oxide 10-30, AgNO3 0.5-5 weight %, and balance V2O5 is deposited, for NH3 detection a layer of rare earth oxide 3-10, Sb2O3 1-5, AgNO3 0.5-5 weight %, and balance V2O5, and for sp. flammable gas detection an Al2O3 or BeO cement is interposed between the **catalytic** metal oxide semiconductor and the **Pt**.

IT **1314-62-1**, uses and miscellaneous
(**catalyst**, in oxide coating on **platinum** resistor for gas sensors)
RN 1314-62-1 HCAPLUS
CN Vanadium oxide (V2O5) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7664-41-7**, analysis
(detection of, rare earth oxide-antimony oxide-silver nitrate-vanadium pentoxide **coated platinum** resistor sensor for)
RN 7664-41-7 HCAPLUS
CN Ammonia (CA INDEX NAME)

NH_3

IT **7440-06-4**, uses and miscellaneous
(resistor, thin-film, sputter-deposition of)
RN 7440-06-4 HCAPLUS
CN Platinum (CA INDEX NAME)

Pt

IC H01C007-22; H01C017-12; H01C013-00; G01N027-12; G01K007-18
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 67, 75, 79, 80
ST sputtering **platinum** film resistor; temp sensor **platinum** resistor film; gas sensor **platinum** resistor film; **catalytic** semiconductor oxide gas sensor
IT Gas analysis
(detection of, semiconductor **catalytic** oxide-**platinum** film resistor sensor for)
IT Rare earth oxides
(gas sensors from sputtered **platinum** resistors coated with)
IT Sputtering
(of **platinum** thin-film resistor)
IT **Catalysts** and **Catalysis**
(semiconductor oxide, for gas detection, on thin-film

platinum resistor support)
IT Temperature
(sensors for, from sputtered **platinum** film coated with silicone or polyimide)
IT Polyimides, uses and miscellaneous
Siloxanes and Silicones, uses and miscellaneous
(temperature sensors from **platinum** resistor coated with)
IT Electric resistors
(film, **platinum**, sputter-deposition of)
IT Combustibles
(gaseous, detection of, semiconductor oxide-cement coated **platinum** resistor sensor for)
IT 1309-64-4, uses and miscellaneous
(**catalyst**, in oxide **coating** for **platinum** resistor for **ammonia** gas sensor)
IT 7761-88-8, uses and miscellaneous
(**catalyst**, in oxide coating on **platinum** film resistor for gas sensors)
IT **1314-62-1**, uses and miscellaneous
(**catalyst**, in oxide coating on **platinum** resistor for gas sensors)
IT 1344-70-3
(**catalyst**, on **platinum** resistor for carbon monoxide gas sensor)
IT 630-08-0, analysis
(detection of, copper oxide-coated sputtered **platinum** resistor sensor for)
IT **7664-41-7**, analysis
(detection of, rare earth oxide-antimony oxide-silver nitrate-vanadium pentoxide **coated platinum** resistor sensor for)
IT 10102-43-9, analysis
(detection of, rare earth oxide-silver nitrate-vanadium pentoxide coated **platinum** resistor sensor for)
IT 1304-56-9 1344-28-1, uses and miscellaneous
(flammable gas sensor from oxide coated **platinum** resistor with intermediate layer of)
IT **7440-06-4**, uses and miscellaneous
(resistor, thin-film, sputter-deposition of)

L68 ANSWER 23 OF 29 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1969:89301 HCAPLUS
DOCUMENT NUMBER: 70:89301
TITLE: Efficient and economical **catalytic** oxidation of **ammonia** in the production of nitric oxide
INVENTOR(S): Keith, Carl D.
PATENT ASSIGNEE(S): Engelhard Minerals and Chemicals Corp.
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3428424	A	19690218	US 1965-434759	19650224
PRIORITY APPLN. INFO.:			US 1965-434759 A	19650224

ED Entered STN: 12 May 1984
AB NO is prepared by reacting gaseous NH3 and atmospheric air in the presence of a **catalyst** which is prepared by depositing 1-10% of a **catalytic** metal, such as **Pt**, Rh, Ir or alloys of **Pt** with Rh, Pd, or Ir, onto the gas flow channels of a porous inert unitary refractory skeletal structure previously coated with a **catalytically** active **refractory metal oxide.** The NO is then oxidized to NO2 in a nitric acid plant and the NO2 absorbed in H2O to form HNO3. The **catalyst** is kept at 650-1000° and 14-110 psig. The skeletal structure is prepared, e.g., from zirconmullite, and the **refractory metal oxide** prepared, e.g., by calcining hydrous alumina at 300-800°, is deposited as a continuous thin film of 0.0004-0.001-in. thickness. Thus, such a **catalyst** containing 2% of **Pt** group metal consisting of an alloy of Rh 20 and **Pt** 80%, dispersed on the **surfaces** of gas flow channels and superficial macropores in contact with a corrugated porous refractory ceramic cylinder of α-Al2O3, was placed in an NH3 converter. The corrugated porous cylinder had a diameter of 3.875 in., was 1.875-in. long with 10 corrugations per in. which defined 20 straight-through unobstructed gas flow channels per in. NO was prepared by passing a mixture of gaseous anhydrous NH3 1 and air 9 parts by volume, preheated to 200°, through the converter where the **catalyst** was at 925° and 110 psig. The **catalyst** showed excellent activity for oxidizing NH3 to NO. In comparison with the conventional process, 1/10 of the **catalytic** metal content can be employed and a materially lower pressure drop is obtained with this new invention. Also, the **catalyst** of this process enabled a weight hourly space velocity of NH3 of .apprx.10 times that of the conventional **catalyst.**
IC C01B021-26A
INCL 023162000
CC 49 (Industrial Inorganic Chemicals)
ST **ammonia** oxidn; oxidn **ammonia**; nitric acid prodn; **catalyst** nitric acid prodn; **platinum** nitric acid prodn; rhodium nitric acid prodn
IT Rhodium alloys, containing
(**platinum**-, as oxidation **catalysts** for **ammonia**)
IT Oxidation **catalysts**
(**platinum**-rhodium alloy skeletal, for **ammonia**)
IT **Platinum** alloys, **base**
(rhodium-, as oxidation **catalysts** for **ammonia**)
IT 10102-43-9P, preparation
(from **ammonia**, **platinum**-rhodium alloy oxidation **catalysts** for)

=> d 24-25 full

L68 ANSWER 24 OF 29 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
AN 1994-357967 [44] WPIX
DNC C1994-163322 [44]
TI Removing metal carbonyls from a gas stream especially synthesis gas - by contact with lead oxide on a support
DC E17; E37; H04; J01
IN CARR N L
PA (DENO-C) DEN NORSKE STATS OLJESELSKAP AS; (DENO-C) STATOIL DEN NORSKE STATS OLJESELSKAP AS
CYC 46

PI WO 9425142 A1 19941110 (199444)* EN 21[0]
AU 9466916 A 19941121 (199508) EN
US 5451384 A 19950919 (199543) EN 6[0]
NO 9504203 A 19951020 (199602) NO
NO 180570 B 19970203 (199712) NO

ADT WO 9425142 A1 WO 1994-NO78 19940421; US 5451384 A US 1993-52395 19930423; AU 9466916 A AU 1994-66916 19940421; NO 9504203 A WO 1994-NO78 19940421; NO 180570 B WO 1994-NO78 19940421; NO 9504203 A NO 1995-4203 19951020; NO 180570 B NO 1995-4203 19951020

FDT NO 180570 B Previous Publ NO 9504203 A; AU 9466916 A Based on WO 9425142 A

PRAI US 1993-52395 19930423

IPCR **B01D0053-46** [I,A]; **B01D0053-46** [I,C]; **B01D0053-64** [I,A]; **B01D0053-72** [I,A]; B01J0020-06 [I,A]; B01J0020-06 [I,C]; C10K0001-00 [I,C]; C10K0001-20 [I,A]

AB WO 1994025142 A1 UPAB: 20050824
The metal carbonyl content of a gas stream (I) is reduced by contacting the stream with lead oxide dispersed on a support.

USE - (I) is a gas containing carbon monoxide, especially synthesis gas. Such a gas may form carbonyls by contact with metals, e.g. iron carbonyls by contact with steel processing equipment; the carbonyls poison catalysts in downstream conversion processes, e.g. when synthesis gas is used in Fischer-Tropsch, **ammonia** or methanol synthesis processes.

ADVANTAGE - Supported lead oxide removes Fe(CO)5 rapidly from the gas, and has high capacity, e.g. up to 5 weight% iron on the sorbent trap; it is non-catalytic for synthesis and hydrogenation reactions.

ABDT WO9425142
The metal carbonyl content of a gas stream (I) is reduced by contacting the stream with lead oxide dispersed on a support.

USE

(I) is a gas containing carbon monoxide, especially synthesis gas. Such a gas may form carbonyls by contact with metals, e.g. iron carbonyls by contact with steel processing equipment; the carbonyls poison catalysts in downstream conversion processes, e.g. when synthesis gas is used in Fischer-Tropsch, **ammonia** or methanol synthesis processes.

ADVANTAGE

Supported lead oxide removes Fe(CO)5 rapidly from the gas, and has high capacity, e.g. up to 5 weight% iron on the sorbent trap; it is non-catalytic for synthesis and hydrogenation reactions.

EXAMPLE

The sorbent consisted of 21.4 weight% PbO spherical particles dispersed on gamma alumina of dia. 3 mm; surface area of the sorbent was 272 m2/g, pore volume 0.42 gm3/g. Two stainless steel tubes (in parallel), length 2 m, dia. 25.4 mm, were filled with the sorbent, and synthesis gas containing 7 ppm Fe(CO)5 passed at 31.25 Nl/min., 25°C, 20 bar, GHSV 1000, for 20 days. The amts. of iron strapped in each of 5 zones regularly spaced along the whole length of the trap, starting at the inlet end, were: (1) 1.49, (2) 1.33, (3) 0.268, (4) 0.154 and (5) 0.0042 weight%. (SJP)

PREFERRED SORBENT

The support is a porous **refractory metal oxide** of surface area greater than 50 m2.g, e.g. gamma alumina of surface area 150-300 m2/g. Lead oxide is 5-50, especially 10-30 weight% of the combination.

PREFERRED PROCESS

(I) contains at least 5 mole% carbon monoxide. It is e.g. synthesis gas, containing 10-90% CO, 10-90% H2 and 0-80% nitrogen. The metal carbonyl is iron, nickel or cobalt carbonyl; metal carbonyl content of

(I) is over 5 ppm before treatment, and less than 1 ppm after treatment. Contact takes place at 0-100, 0-50 or 25-50°C.

FS CPI

MC CPI: E11-Q01; E11-Q02; E31-A01; E35-J; E35-U05; H04-A02; J01-E02

L68 ANSWER 25 OF 29 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN

AN 1984-127535 [21] WPIX

DNC C1984-053889 [21]

TI Auto-thermal reforming by partial oxidation and steam reforming - using monolithic **platinum**-gp.-metal-containing partial oxidation catalyst

DC H04; H09

IN BUCHANAN W; FLANAGAN P; HECK R M; MCSHEA W T; YARRINGTON R M

PA (ENGH-C) ENGELHARD CORP; (ENGH-C) ENGELHARD MINERALS CORP

CYC 17

PI

AU 8319728	A	19840405	(198421)*	EN	104[7]
NO 8303522	A	19840424	(198423)	NO	
DK 8304483	A	19840514	(198426)	DA	
EP 112613	A	19840704	(198427)	EN	
JP 59097501	A	19840605	(198428)	JA	
ES 8503717	A	19850616	(198549)	ES	
CA 1210242	A	19860826	(198639)	EN	
CA 1210567	A	19860902	(198640)	EN	
CA 1217504	A	19870203	(198711)	EN	
CA 1222631	A	19870609	(198727)	EN	
US 4844837	A	19890704	(198934)	EN	
US 4863707	A	19890905	(198945)	EN	
US 4927857	A	19900522	(199024)	EN	
EP 112613	B	19910306	(199110)	EN	
DE 3382193	G	19910411	(199116)	DE	
US 5023276	A	19910611	(199126)	EN	
NO 171409	B	19921130	(199302)	NO	

ADT AU 8319728 A AU 1983-19728 19830929; US 4844837 A US 1982-430147 19820930; US 4863707 A US 1982-430147 19820930; US 4927857 A US 1982-430147 19820930; US 5023276 A US 1982-430147 19820930; US 4844837 A US 1982-430200 19820930; US 4863707 A US 1982-430200 19820930; US 4927857 A US 1982-430200 19820930; US 5023276 A US 1982-430200 19820930; US 4844837 A US 1982-430320 19820930; US 4863707 A US 1982-430320 19820930; US 4927857 A US 1982-430320 19820930; US 5023276 A US 1982-430320 19820930; US 4844837 A US 1982-430451 19820930; US 4927857 A US 1982-430451 19820930; US 5023276 A US 1982-430451 19820930; US 4844837 A US 1982-430452 19820930; US 4863707 A US 1982-430452 19820930; US 4927857 A US 1982-430452 19820930; US 5023276 A US 1982-430452 19820930; EP 112613 A EP 1983-305887 19830929; JP 59097501 A JP 1983-179530 19830929; NO 171409 B NO 1983-3522 19830929; US 4863707 A US 1989-296385 19890106; US 4927857 A US 1989-298875 19890118; US 5023276 A US 1989-300197 19890119

FDT NO 171409 B Previous Publ NO 8303522 A

PRAI US 1982-430147 19820930
US 1982-430200 19820930
US 1982-430320 19820930
US 1982-430451 19820930
US 1982-430452 19820930
US 1989-296385 19890106
US 1989-298875 19890118
US 1989-300197 19890119

IPCR B01J0019-24 [I,A]; B01J0019-24 [I,C]; B01J0023-00 [I,A]; B01J0023-00 [I,C]; B01J0023-44 [I,A]; B01J0023-44 [I,C]; B01J0008-02 [I,A]; B01J0008-02 [I,C]; C01B0003-00 [I,C]; C01B0003-00 [I,C]; C01B0003-32 [I,A]; C01B0003-36 [I,A]; C01B0003-38 [I,A]; C01B0003-38 [I,A]; C01B0003-40 [I,A]; C01B0003-48 [I,A]; C01C0001-00 [I,C]; C01C0001-00

[I,C]; C01C0001-04 [I,A]; C01C0001-04 [I,A]; C07C0001-00 [I,C]; C07C0001-04 [I,A]; C07C0027-00 [I,A]; C07C0027-00 [I,C]; C07C0027-06 [I,A]; C07C0029-00 [I,C]; C07C0029-15 [I,A]; C07C0029-151 [I,A]; C07C0031-00 [I,C]; C07C0031-04 [I,A]; C07C0067-00 [I,A]; C07C0067-00 [I,C]; C10G0035-00 [I,C]; C10G0035-02 [I,A]; C10J0003-02 [I,C]; C10J0003-16 [I,A]; C10K0003-00 [I,C]; C10K0003-02 [I,A]

AB AU 8319728 A UPAB: 20060104
Production of synthesis gas is effected in two stages: (i) catalytic partial oxidation of a feed mixture comprising hydrocarbon feed stream, H2O and O2-containing gas; the preheated feed mixture being contacted with a monolithic (honeycomb-type) catalyst (I) comprising Pd and Pt (andopt. Rh) on a **refractory metal oxide**, and
(ii) catalytic steam reforming of the first-stage effluent over a Pt-Rh steam reforming catalyst.
Specifically, the feed mixture to stage (i) is controlled to give an H2O:C ratio of 0.5-5 and an O2:C ratio of 0.2-0.8, and the step is carried out at 1-142 atmospheric and at such temps. that at least part of (I) is at at least 121 deg.C above the ignition temperature of the inlet stream, providing cracking of any unoxidised 5C + hydrocarbons to light (4C or below) hydrocarbons.
The specifically claimed embodiments relate to integrated processes utilising the H2-rich product gas for the production of (A) **ammonia**, (B) methanol, (C) SNG and (D) liquid hydrocarbons. Very low catalytic metal loadings may be used. Operation is at relatively low H2O:C and O2:C ratios, without catalyst fouling by C deposition.

FS CPI

MC CPI: H04-C01; H04-C02; H04-F02C; N02-E; N02-F02

=> d 26-29 ibib abs ind

L68 ANSWER 26 OF 29 JAPIO (C) 2007 JPO on STN
ACCESSION NUMBER: 1993-168926 JAPIO
TITLE: CATALYST EXCELLENT IN HEAT RESISTANCE FOR PURIFYING EXHAUST GAS OF INTERNAL COMBUSTION ENGINE AND PRODUCTION THEREOF
INVENTOR: YAMADA SADAJI; FUNABIKI MASAKI
PATENT ASSIGNEE(S): N E CHEMCAT CORP
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 05168926	A	19930702	Heisei	B01J023-58

APPLICATION INFORMATION
STN FORMAT: JP 1992-148025 19920515
ORIGINAL: JP04148025 Heisei
PRIORITY APPLN. INFO.: JP 1992-148025 19920515
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993

AN 1993-168926 JAPIO

AB PURPOSE: To enhance capacity for keeping purifying activity by forming an active layer containing a **platinum** group element, activated alumina, cerium oxide, a barium compound and a zirconium compound on a support.
CONSTITUTION: Catalyst components consisting of a **platinum** group element, activated alumina, for example, α-alumina with a specific surface area of 10-300m<SP>2</SP>/g, cerium oxide, a barium compound such as barium hydroxide and a zirconium compound such as zirconium oxide are supported on a support having a monolithic

structure. The support is formed into a honeycomb shape from **refractory metal oxide** such as cordierite.
The wts. of the **platinum** group element, activated alumina, cerium oxide, the barium compound and the zirconium compound per 1L of a catalyst are respectively set to 0.02-2g, 30-200g, 10-150g, 0.1-20g (as barium oxide) and 0.1-30g.

IC ICM B01J023-58
ICS B01D053-36

L68 ANSWER 27 OF 29 JAPIO (C) 2007 JPO on STN
ACCESSION NUMBER: 1993-115780 JAPIO
TITLE: CATALYST FOR CLEANING EXHAUST GAS
INVENTOR: SHIRAISHI EIICHI; BABA HIDEYUKI; TSUCHIYA KAZUO; OHATA TOMOHISA
PATENT ASSIGNEE(S): NIPPON SHOKUBAI CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 05115780	A	19930514	Heisei	B01J023-58

APPLICATION INFORMATION
STN FORMAT: JP 1992-101005 19920421
ORIGINAL: JP04101005 Heisei
PRIORITY APPLN. INFO.: JP 1991-90624 19910422
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
AN 1993-115780 JAPIO
AB PURPOSE: To remove simultaneously carbon monoxide (CO), hydrocarbon (HC), and nitrogen oxides (NOx) which are harmful components contained in an exhaust gas from internal combustion engines including automobiles.
CONSTITUTION: A catalyst for cleaning exhaust gas composed of an integrated structure coated with a catalyst composition which contains (a) Pd and Rh or (b) Pd, RH, **platinum** as noble metals, and alkaline earth metal oxide, cerium oxide, zirconium oxide, and **refractory metal oxide.** A preferable catalyst composition for one liter of the integrated structure is: 0.1-50g of alkaline earth metal oxide, 5-100g of cerium oxide, 0.1-30g of zirconium oxide. Cerium oxide and zirconium oxide are preferably in the form at least partly of complex metal oxide or solid solution.

IC ICM B01J023-58
ICS B01D053-36

L68 ANSWER 28 OF 29 JAPIO (C) 2007 JPO on STN
ACCESSION NUMBER: 1988-270544 JAPIO
TITLE: PRODUCTION OF CATALYST FOR CLEANING EXHAUST GAS
INVENTOR: FUNABIKI MASAKI; OZAKI YUKIO
PATENT ASSIGNEE(S): NIPPON ENGERUHARUDO KK
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 63270544	A	19881108	Showa	B01J023-58

APPLICATION INFORMATION
STN FORMAT: JP 1987-104394 19870430
ORIGINAL: JP62104394 Showa

PRIORITY APPLN. INFO.: JP 1987-104394 19870430
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988

AN 1988-270544 JAPIO
AB PURPOSE: To increase high temperature durability of a catalyst by preparing a slurry by adding activated alumina containing the **platinum** group element, selenium oxide and barium nitrate, etc., sticking the slurry on a carrier having an integrated structure and thereafter calcining it.
CONSTITUTION: The slurry containing activated alumina containing **platinum** group element, selenium oxide and barium nitrate, and/or barium formate is prepared. The catalyst for cleaning exhaust gas is produced by sticking the slurry on the carrier having the integrated structure and thereafter calcining it. Said carrier consists of **refractory metal oxide** or durable metal and its monolithic or three-dimensional network structure is preferable as the form of the carrier. Selenium oxide content is preferably 10∼200g/1l catalyst obtd.
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IC ICM B01J023-58
ICS B01D053-36

L68 ANSWER 29 OF 29 JAPIO (C) 2007 JPO on STN
ACCESSION NUMBER: 1982-105240 JAPIO
TITLE: EXHAUST GAS PURIFYING CATALYST AND PREPARATION THEREOF
INVENTOR: WATANABE HIROO; KAWAMATA MOTOO; YAMAKAWA KOICHI
PATENT ASSIGNEE(S): MITSUI TOATSU CHEM INC
TOYO C C I KK
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 57105240	A	19820630	Showa	B01J023-40

APPLICATION INFORMATION
STN FORMAT: JP 1980-182020 19801224
ORIGINAL: JP55182020 Showa
PRIORITY APPLN. INFO.: JP 1980-182020 19801224
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982

AN 1982-105240 JAPIO
AB PURPOSE: To provide the exhaust gas purifying catalyst which comprises materials containing each noble metal components in separate carrier layers mutually and does not generate mutual movement and mixture of each noble metal components even at high temperature and of which each catalyst components continuously develop maximum intrinsic activity respectively.
CONSTITUTION: An aqueous slurry containing one kind of a **platinum** group metal or a water insol. compound thereof and a **refractory metal oxide** (e.g.; alumina) is coated on and adhered to a carrier (e.g.; a cordierite type honeycomb carrier) and, after drying, the treated carrier is fired. Next, an aqueous slurry containing a **platinum** group metal or a water insol. compound thereof and a **refractory metal oxide** which are different from one used in the aforementioned treatment is similarily coated on and adhered to the obtained incomplete catalyst and, after drying, firing is carried out. Those treatments are repeated corresponding to a number of the **platinum** group metals to be desirably contained and the

objective catalyst having carrier layers containing the **platinum** group metals as a multilayer is completed. This catalyst perfectly purifies CO, a hydrocarbon, a combustible organic compound, NOX or the like in an exhaust gas and the exhaust gas can be made harmless.

IC ICM B01J023-40
ICS B01J037-02
ICA B01D053-36; B01J023-46

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=> d his nofile

     (FILE 'HOME' ENTERED AT 10:01:35 ON 28 AUG 2007)

     FILE 'HCAPLUS' ENTERED AT 10:01:45 ON 28 AUG 2007
L1             1 SEA ABB=ON  PLU=ON  US20050054524/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 10:02:00 ON 28 AUG 2007
L2             5 SEA ABB=ON  PLU=ON  (11122-73-9/BI OR 1314-62-1/BI OR
                 1344-28-1/BI OR 7440-06-4/BI OR 7664-41-7/BI)
L3             1 SEA ABB=ON  PLU=ON  7664-41-7/RN
L4             1 SEA ABB=ON  PLU=ON  1344-28-1/RN
L5             1 SEA ABB=ON  PLU=ON  1314-62-1/RN
L6             1 SEA ABB=ON  PLU=ON  7440-06-4/RN
L7             1 SEA ABB=ON  PLU=ON  11122-73-9/RN

     FILE 'HCAPLUS' ENTERED AT 10:20:08 ON 28 AUG 2007
L8        227949 SEA ABB=ON  PLU=ON  L3 OR AMMONIA
L9         25987 SEA ABB=ON  PLU=ON  L5 OR VANADIA
L10       347310 SEA ABB=ON  PLU=ON  L6 OR PLATINUM OR PT
L11         3596 SEA ABB=ON  PLU=ON  L7 OR FECR
L12         2926 SEA ABB=ON  PLU=ON  L7
L13            1 SEA ABB=ON  PLU=ON  L8 AND L9 AND L10 AND L12
                 E  REFRACTORY METAL OXIDES/CT
L14          325 SEA ABB=ON  PLU=ON  "REFRACTORY METAL OXIDES"+PFT,NT/CT
L15           10 SEA ABB=ON  PLU=ON  L14 AND L8
L16           16 SEA ABB=ON  PLU=ON  L8 AND  REFRACTORY METAL OXIDE?
L17           16 SEA ABB=ON  PLU=ON  L15 OR L16
L18            5 SEA ABB=ON  PLU=ON  L17 AND L10
L19            3 SEA ABB=ON  PLU=ON  L18 AND L9
L20           16 SEA ABB=ON  PLU=ON  (L17 OR L18 OR L19)
L21           16 SEA ABB=ON  PLU=ON  L13 OR L20
L22            1 SEA ABB=ON  PLU=ON  LAYERED AMMONIA OXIDAT?
L23         3033 SEA ABB=ON  PLU=ON  AMMONIA OXIDAT?
L24            1 SEA ABB=ON  PLU=ON  L23 AND L14
L25              QUE ABB=ON  PLU=ON  FILM? OR THINFILM? OR LAYER? OR
                 OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR MULTILAYER?
                 OR SHEET? OR LEAF? OR FOIL? OR COAT? OR VENEER? OR SHEATH?
                 OR COVER?
L26         20003 SEA ABB=ON  PLU=ON  L8(L)L25
L27            1 SEA ABB=ON  PLU=ON  L26 AND L14
L28           18 SEA ABB=ON  PLU=ON  L26 AND L10 AND L9
L29           15 SEA ABB=ON  PLU=ON  L28 AND CAT/RL
                 E  OXIDATION CATALYSTS/CT
L30         91484 SEA ABB=ON  PLU=ON  "OXIDATION CATALYSTS"+PFT,NT/CT
L31            5 SEA ABB=ON  PLU=ON  L29 AND L30
L32           10 SEA ABB=ON  PLU=ON  L29 NOT L31
L33           29 SEA ABB=ON  PLU=ON  L21 OR L22 OR L29 OR L31
L34           17 SEA ABB=ON  PLU=ON  L33 AND AIR POLLU?/SC,SX
L35           12 SEA ABB=ON  PLU=ON  L33 NOT L34
L36            6 SEA ABB=ON  PLU=ON  L35 AND CAT?
L37              QUE ABB=ON  PLU=ON  SUBSTRAT? OR SURFACE? OR BASE# OR
                 SUBSTRUCT? OR UNDERSTRUCT? OR UNDERLAY? OR FOUNDATION? OR
                 PANE? OR DISK? OR DISC# OR WAFER?
L38          780 SEA ABB=ON  PLU=ON  L37 AND L12
L39            1 SEA ABB=ON  PLU=ON  L38 AND L8 AND L9 AND L10
L40            3 SEA ABB=ON  PLU=ON  L38 AND L8
L41            4 SEA ABB=ON  PLU=ON  L36 AND L37
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L42          23 SEA ABB=ON  PLU=ON  L34 OR (L39 OR L40 OR L41)

     FILE 'WPIX' ENTERED AT 10:57:59 ON 28 AUG 2007
L43           1 SEA ABB=ON  PLU=ON  US20050054524/PN
L44         530 SEA ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L45          13 SEA ABB=ON  PLU=ON  L44 AND AMMONIA
L46           4 SEA ABB=ON  PLU=ON  L45 AND PLATINUM?
L47           1 SEA ABB=ON  PLU=ON  L45 AND VANADIA?
L48           4 SEA ABB=ON  PLU=ON  L46 OR L47
L49           3 SEA ABB=ON  PLU=ON  L45 AND  B01D0053?/IPC
L50           5 SEA ABB=ON  PLU=ON  L48 OR L49
L51          67 SEA ABB=ON  PLU=ON  L44 AND PLATINUM
L52          33 SEA ABB=ON  PLU=ON  L51 AND  B01D0053?/IPC
L53          17 SEA ABB=ON  PLU=ON  L52 AND L37
L54          17 SEA ABB=ON  PLU=ON  L53 AND CATALYST?
L55           2 SEA ABB=ON  PLU=ON  L54 AND (AMMONIA OR NH3)
L56           5 SEA ABB=ON  PLU=ON  L50 OR L55

     FILE 'COMPENDEX' ENTERED AT 11:05:45 ON 28 AUG 2007
L57           0 SEA ABB=ON  PLU=ON  L44 AND AMMONIA

     FILE 'PASCAL' ENTERED AT 11:06:40 ON 28 AUG 2007
L58           0 SEA ABB=ON  PLU=ON  L44 AND AMMONIA
L59          14 SEA ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L60           0 SEA ABB=ON  PLU=ON  L59 AND (AMMONIA OR NH3)
L61           0 SEA ABB=ON  PLU=ON  L58 OR L60

     FILE 'JAPIO' ENTERED AT 11:10:40 ON 28 AUG 2007
L62           0 SEA ABB=ON  PLU=ON  L44 AND AMMONIA
L63          27 SEA ABB=ON  PLU=ON  REFRACTORY METAL OXIDE?
L64           0 SEA ABB=ON  PLU=ON  L63 AND NH3
L65           4 SEA ABB=ON  PLU=ON  L63 AND PLATINUM
L66           0 SEA ABB=ON  PLU=ON  L63 AND VANADIA
L67           4 SEA ABB=ON  PLU=ON  L62 OR (L64 OR L65 OR L66)

     FILE 'HCAPLUS, WPIX, JAPIO' ENTERED AT 11:45:50 ON 28 AUG 2007
L68          29 DUP REM L42 L56 L57 L61 L67 (3 DUPLICATES REMOVED)
                    ANSWERS '1-23' FROM FILE HCAPLUS
                    ANSWERS '24-25' FROM FILE WPIX
                    ANSWERS '26-29' FROM FILE JAPIO
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